

**CHEMICALS, THE ENVIRONMENT, AND YOU****Wisconsin Model Academic Standards for Science – Grade 8**

<b>Lesson</b>	<b>Standard</b>	<b>Description</b>
<b>All lessons</b>	<b>A.8.1</b>	Develop their understanding of the science themes by using the themes to frame questions about science-related issues and problems.
<b>2, 3, 4</b>	<b>A.8.3</b>	Defend explanations and models by collecting and organizing evidence that supports them and critique explanations and models by collecting and organizing evidence that conflicts with them.
<b>2, 3, 4</b>	<b>A.8.6</b>	Use models and explanations to predict actions and events in the natural world.
<b>2, 3, 4</b>	<b>A.8.7</b>	Design real or thought investigations to test the usefulness and limitations of a model.
<b>All lessons</b>	<b>B.8.3</b>	Explain how the general rules of science apply to the development and use of evidence in science investigations, model making, and applications.
<b>1, 2, 3, 4</b>	<b>B.8.5</b>	Explain ways in which science knowledge is shared, checked, and extended, and show how these processes change over time.
<b>1, 2, 3, 5</b>	<b>B.8.6</b>	Explain the ways in which scientific knowledge is useful and also limited when applied to social issues.
<b>2, 3, 4, 5</b>	<b>C.8.1</b>	Identify questions they can investigate using resources and equipment they have available.
<b>2, 3, 4, 5, 6</b>	<b>C.8.2</b>	Identify data and locate sources of information including their own records to answer the questions being investigated.
<b>2, 4, 6</b>	<b>C.8.3</b>	Design and safely conduct investigations that provide reliable quantitative or qualitative data, as appropriate, to answer their questions.
<b>2, 3, 4, 5, 6</b>	<b>C.8.4</b>	Use inferences to help decide possible results of their investigations, use observations to check their inferences.
<b>2, 3, 4</b>	<b>C.8.5</b>	Use accepted scientific knowledge, models, and theories to explain their results and to raise further questions about their investigations.
<b>2, 3, 4, 5, 6</b>	<b>C.8.6</b>	State what they have learned from investigations, relating their inferences to scientific knowledge and to data they have collected.
<b>2, 3, 4, 5, 6</b>	<b>C.8.7</b>	Explain their data and conclusions in ways that allow an audience to understand the questions they selected for investigation and the answers they have developed.
<b>2, 3, 4, 5, 6</b>	<b>C.8.9</b>	Evaluate, explain, and defend the validity of questions, hypotheses, and conclusions to their investigations.
<b>2, 3, 4, 5, 6</b>	<b>C.8.10</b>	Discuss the importance of their results and implications of their work with peers, teachers, and other adults.

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2, 3, 4, 5, 6	C.8.11	Raise further questions which still need to be answered.
2, 3, 4, 5, 6	D.8.4	While conducting investigations, use the science themes to develop explanations of physical and chemical interactions and energy exchanges.
2	F.8.1	Understand the structure and function of cells, organs, tissues, organ systems, and whole organisms.
2	F.8.2	Show how organisms have adapted structures to match their functions, providing means of encouraging individual and group survival within specific environments.
2, 3	F.8.6	Understand that an organism is regulated both internally and externally
1, 3	G.8.1	Identify and investigate the skills people need for a career in science or technology and identify the academic courses that a person pursuing such a career would need.
1, 5, 6	G.8.3	Illustrate the impact that science and technology have had, both good and bad, on careers, systems, society, environment, and quality of life.
5	G.8.5	Investigate a specific local problem to which there has been a scientific or technological solution, including proposals for alternative courses of action, the choices that were made, reasons for the choices, any new problems created, and subsequent community satisfaction.
5, 6	H.8.2	Present a scientific solution to a problem involving the earth and space, life and environmental, or physical sciences and participate in a consensus-building discussion to arrive at a group decision.
1, 4, 5, 6	H.8.3	Understand the consequences of decisions affecting personal health and safety.

**Wisconsin Model Academic Standards for Mathematics – Grade 8**

Lesson	Standard	Description
2, 3, 4, 5, 6	A.8.1	Use reasoning abilities to: evaluate information, perceive patterns, identify relationships, formulate questions for further exploration, evaluate strategies, justify statements, test reasonableness of results, and defend work.
All lessons	A.8.3	Analyze non-routine problems by modeling, illustrating, guessing, simplifying, generalizing, shifting to another point of view, etc.
2, 3, 4	A.8.4	Develop effective oral and written presentations that include appropriate use of technology, the conventions of mathematical discourse (e.g., symbols, definitions, labeled drawings), mathematical language, clear organization of ideas and procedures, and understanding of purpose and audience.
2, 3, 4	B.8.1	Read, represent, and interpret various rational numbers (whole numbers, integers, decimals, fractions, and percents) with verbal descriptions, geometric models, and mathematical notation (e.g., expanded, scientific, exponential).
2, 3, 4	B.8.2	Perform and explain operations on rational numbers (add, subtract, multiply, divide, raise to a power, extract a

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		root, take opposites and reciprocals, determine absolute value).
2, 4	B.8.3	Generate and explain equivalencies among fractions, decimals, and percents.
2, 4	B.8.5	Apply proportional thinking in a variety of problem situations that include, but are not limited to ratios and proportions (e.g., rates, scale drawings, similarity), or percents, including those greater than 100 and less than one (e.g., discounts, rate of increase or decrease, sales tax).
2	D.8.2	Demonstrate understanding of basic measurement facts, principles, and techniques including the following: approximate comparisons between metric and US Customary units (e.g., a liter and a quart are about the same; a kilometer is about six-tenths of a mile), knowledge that direct measurement produces approximate, not exact, measures, and the use of smaller units to produce more precise measures.
2, 4	D.8.3	Determine measurement directly using standard units (metric and US Customary) with these suggested degrees of accuracy: lengths to the nearest mm or 1/16 of an inch, weight (mass) to the nearest 0.1 g or 0.5 ounce, liquid capacity to the nearest ml, angles to the nearest degree, temperature to the nearest C or F, and elapsed time to the nearest second.
2, 3, 4	E.8.1	Work with data in the context of real-world situations by: formulating questions that lead to data collection and analysis, designing and conducting a statistical investigation, and using technology to generate displays, summary statistics, and presentations.
2, 3, 4	E.8.2	Organize and display data from statistical investigations using: appropriate tables, graphs, and/or charts (e.g., circle, bar or line for multiple sets of data), or appropriate plots (e.g., line, stem-and-leaf, box, scatter).
2, 3, 4	E.8.4	Use the results of data analysis to: make predictions, develop convincing arguments, and draw conclusions.
2, 3, 4	E.8.5	Compare several sets of data to generate, test, and, as the data dictate, confirm or deny hypotheses.
2, 3	E.8.6	Evaluate presentations and statistical analyses from a variety of sources for: credibility of the source, techniques of collection, organization, and presentation of data, missing or incorrect data, inferences, and possible sources of bias.
3	F.8.2	Work with linear and nonlinear patterns and relationships in a variety of ways, including representing them with tables, with graphs, and with algebraic expressions, equations, and inequalities, describing and interpreting their graphical representations (e.g., slope, rate of change, intercepts), using them as models of real-world phenomena, and describing a real-world phenomenon that a given graph might represent.

**Wisconsin Model Academic Standards for English Language Arts – Grade 8**

Lesson	Standard	Description
2, 3, 4, 5, 6	A.8.1	Use effective reading strategies to achieve their purposes in reading.

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2, 3, 4, 5, 6	A.8.4	Read to acquire information.
All lessons	B.8.1	Create or produce writing to communicate with different audiences for a variety of purposes.
All lessons	B.8.3	Understand the function of various forms, structures, and punctuation marks of standard American English and use them appropriately in communications.
All lessons	C.8.1	Orally communicate information, opinions, and ideas effectively to different audiences for a variety of purposes.
All lessons	C.8.2	Listen to and comprehend oral communications.
All lessons	C.8.3	Participate effectively in discussion.
All lessons	D.8.1	Develop their vocabulary and ability to use words, phrases, idioms, and various grammatical structures as a means of improving communication.
1, 4, 5, 6	E.8.1	Use computers to acquire, organize, analyze, and communicate information.
All lessons	F.8.1	Conduct research and inquiry on self-selected or assigned topics, issues, or problems and use an appropriate form to communicate their findings.

**Wisconsin Model Academic Standards for Health Education – Grade 8**

Lesson	Standard	Description
All lessons	A.8.2	Analyze how environments and personal health are interrelated.
4, 5, 6	A.8.3	Describe how to enhance health and reduce risks during adolescence.
1, 5, 6	A.8.4	Describe how lifestyle, family history, and other risk factors are related to the cause or prevention of disease and other health problems.
4	A.8.5	Explain how health is influenced by the interaction of body systems.
4, 5, 6	A.8.7	Explain the relationship between positive health behaviors and the prevention of injury, illness, disease, and premature death.
4, 5, 6	B.8.1	Explain the importance of assuming responsibility for personal health behaviors.
4, 5, 6	B.8.3	Analyze the short-term and long-term consequences of various behaviors.
4, 5	B.8.4	Demonstrate strategies to improve and maintain personal and family health.
4, 5, 6	C.8.1	Demonstrate the ability to individually and collaboratively apply a decision-making process to health issues.
4, 5, 6	C.8.2	Analyze how health-related decisions are influenced by individuals, family, and community values.
1, 4, 5, 6	C.8.3	Analyze how decisions regarding health behaviors have consequences for themselves and others.
3, 4	D.8.1	Analyze the validity of health information, products, and services.

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<b>5, 6</b>	<b>D.8.6</b>	Describe situations requiring professional health services.
<b>1, 5, 6</b>	<b>E.8.3</b>	Analyze the influence of technology on personal and family health.
<b>4, 5, 6</b>	<b>F.8.3</b>	Demonstrate ways to communicate care, consideration, and respect for themselves and others.
<b>All lessons</b>	<b>G.8.1</b>	Analyze various methods to accurately express health information and ideas.
<b>All lessons</b>	<b>G.8.2</b>	Convey valid information and express opinions about health issues.
<b>4, 5, 6</b>	<b>G.8.4</b>	Demonstrate the ability to influence and support others in making positive health choices.